

server 16 periodically, through the use of exception processing, or in any other suitable manner.

Once the user selects one or more products, the user may specify desired quantities, desired due dates, and any additional parameters such as those discussed 5 above. The user may also logically group request line-items for shipment scheduling purposes. Client 12 executes an ATP request submission function when ATP request 30 is completely specified, sending ATP request 30 to fulfillment server 16.

ATP request 30 may be structured in a three-level parent-child hierarchy that includes a request object, a request line-item object, and a request line-item delivery 10 object, although any suitable data or message structure may be used without departing from the intended scope of the present invention. As an example, an alternative three-level structure for ATP request 30 might include a request object that contains a list of one or more request delivery objects, each containing one or more request line-item objects.

15 Request Attributes

In one embodiment, the request object has the following attributes or otherwise supports the following information, in any suitable combination and without limitation: (1) *user ID* - user of client 12 submitting the request; (2) *customer ID* - used to determine business constraints relevant to request; (3) *customer request ID* - assigned at client 12 and used primarily for tracking purposes; (4) *request ID* - assigned at fulfillment server 16 and used for subsequent processing and administrative activities; (5) *currency* - the preferred currency for request, possibly defaulted from profiled business constraints; (6) *sales channel (seller)* - sales channel 20 for request, useful where ATP servers 14 provide allocation functionality based on a multi-level channel hierarchy and seller determines channel from which to consume ATP; (7) *request rank* - numeric or other ranking of request relative to other requests for same product, useful as sort criterion where ATP servers 14 provide functionality relative to differential ranking of requests within order scheduling process, such as when allocating scarce supply in light of supply problems; (8) *ship-to* - ship-to 25 location for request, which may default to each request line-item; (9) *override customer constraints* - allows user to override business constraint processing functionality of fulfillment server 16 such that the responses from LFM 22 and/or

ATP servers 14 are not constrained; (10) *total price target* - user-specified total price target for request, which fulfillment server 16 may consider in evaluating the responses from LFM 22 and/or ATP servers 14 and, if not met, may indicate in resulting quotation; (11) *alternates/substitutes allowed* - logical (yes/no) parameter 5 defaulted from profiled business constraints, which user may be able to selectively override and fulfillment server 16 may use in processing request; (12) *alternate location acceptable* - logical parameter defaulted from the profiled business constraints, which user may be able to selectively override and fulfillment server 16 may use in processing request; (13) *ship complete* - logical parameter defaulted from 10 profiled business constraints, which the user may be able to selectively override and fulfillment server 16 may use in processing request such that component quotations short of the *request quantity* attribute are rejected; (14) *partial/cancel* - logical parameter defaulted from profiled business constraints, which user may be able to selectively override and fulfillment server 16 may use in processing request such that 15 late promises (unfulfilled portions of request) are either dropped or carried as backlog; (15) *ship on-time* - logical parameter defaulted from profiled business constraints, which the user may be able to selectively override and fulfillment server may use in processing request according to whether it is acceptable to receive early or late component promises from LFM 22 and/or ATP servers 14; (16) *short proportional* - 20 logical parameter defaulted from the profiled business constraints, which user may be able to selectively override and fulfillment server 16 may use in processing request such that promises among logically associated request line-items are reduced (shorted) in proportion in to another shorted request line-item; (17) *initial date requested* - date request first submitted to fulfillment server 16 for quotation; (18) *last 25 date requested* - date request last submitted to fulfillment server 16 for re-quotation, if any; (19) *date quoted* - date request last quoted, if any; (20) *date accepted* - date client 12 last accepted request, if any; (21) *date rejected* - date client 12 last rejected request in full, if any; (22) *date promised* - date request last promised, if any; (23) *date canceled* - date request canceled, if any; and (24) *date queued* - date request last 30 queued, if any.

In addition, the request object may support a request status field that fulfillment server 16 updates at certain milestones during the life of ATP request 30,

including but not limited to: (1) "failed request" - request submitted for initial quotation or re-quote, but one or more request line-items do not meet requirements; (2) "pending quotation" - request submitted for initial quotation or re-quoted, but resulting quotation yet to be processed; (3) "failed quotation" - fulfillment server 16
5 determined quotation failed to meet profiled business constraints for request; (4) "pending acceptance" - fulfillment server 16 processed quotation and sent it to client 12, but client 12 yet to respond; (5) "acceptance not received" - quotation confirmation not received from client 12 by date and time specified in *accept-by* attribute, such that quotation essentially null and void; (6) "rejected" - fulfillment
10 server 16 processed a rejection and sent it to LFMs 22 and/or ATP servers 14; (7) "pending promise" - fulfillment server 16 processed quotation confirmation, sent it to LFMs 22 and/or ATP servers 14, and is now monitoring for component promise responses from LFMs 22 and/or ATP servers 14; (8) "promised" - fulfillment server 16 received component promises and has sent resulting promise to client 12; (9)
15 "failed promise" - fulfillment server 16 has not yet received component promises from LFMs 22 and/or ATP servers 14 and has thus sent failure notification to client 12; (10) "pending cancellation" - fulfillment server 16 processed a cancellation, sent it to LFMs 22 and/or ATP servers 14 and is monitoring confirmation responses from LFMs 22 and/or ATP servers 14; (11) "canceled" - fulfillment server 16 received
20 requisite cancellation confirmations from LFMs 22 and/or ATP servers 14 and sent confirmation to client 12; and (12) "queued" - fulfillment server 16 processed a request queue command and is monitoring the request for re-quotation.

Request Line-Item Attributes

In one embodiment, the request line-item is an object having the following
25 attributes or otherwise supporting the following information, in any combination and without limitation: (1) *request ID* - links request line-item to request; (2) *request line-item ID* - assigned at fulfillment server 16; (3) *ship-to* - default ship-to address for request line-item, which is defaulted from request, user may be able to selectively override, and is defaulted to request line-item delivery; (4) *accept by* - date and time
30 by which user must accept quotation; (5) *promise by* - date and time by which fulfillment server 16 must respond with promise; (6) *product ID* - requested product for the request line-item; (7) *product UOM* - primary unit of measure (UOM) for the